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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,563	09/15/2003	Michael Ryan Davis	200309569-1	9738

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EXAMINER	
SURYAWANSHI, SURESH	

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/662,563	DAVIS ET AL.	
	Examiner	Art Unit	
	Suresh K. Suryawanshi	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 10-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-5 and 10-13 are presented for examination.

2. Examiner kindly presents possible two groups of rejections in view of prior arts.

Group I

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schelling et al (US Patent 7,036,007; hereinafter Schelling) in view of Huang (US Patent 5,860,002).

5. As per claim 1, 2 and 13, Schelling discloses processor firmware matching mechanism in a system having a plurality of processors and firmware where plurality of processors include more than one processor type. The matching mechanism is based on a firmware interface table [Fig. 2; col. 2, lines 29-34; col. 3, line 29 -- col. 4, line 54; col. 7, lines 31-50; col. 8, lines 13-30].

Schelling does not expressly disclose about having a management (sub) processor. But a routineer in the art would know that having a management processor in a multiprocessor system is well known. However, Huang clearly discloses this [Fig. 2; col. 1, lines 56-58; col. 2, lines 5-25; col. 3, lines 61-67]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the cited references as both are directed to a multiprocessor system. Moreover, a multiprocessor system will clearly be benefited with a management processor because the management processor can monitor not only the other processors but also monitor environment conditions and shutdown events as disclosed by Huang.

6. As per claim 3, Schelling discloses the step of selecting a compatible boot image [Fig. 2; col. 2, lines 29-34; col. 3, line 29 -- col. 4, line 54; col. 7, lines 31-50; col. 8, lines 13-30].

7. As per claims 4 and 5, Schelling discloses that the boot-image information comprises version information [col. 6, lines 48-55].

8. As per claim 10, Schelling discloses that the boot images include boot images for more than one family of processor instruction set architectures [col. 3, lines 14, 29-43].

9. As per claim 11, Schelling discloses that the computer system is a heterogeneous cellular computer system [col. 3, lines 14, 29-43].

10. As per claim 12, Schelling discloses the invention [Fig. 2; col. 2, lines 29-34; col. 3, line 29 -- col. 4, line 54; col. 7, lines 31-50; col. 8, lines 13-30].

Group II

11. Claims 1-5 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thangadurai (US Patent 6,748,526[1]), Fish et al (US Patent 6,381,693[1]; hereinafter Fish) and in view of Huang (US Patent 5,860,002).

12. As per claims 1, 2 and 13, Thangadurai discloses processor firmware matching mechanism in a system having plurality of processors and firmware. The matching mechanism is based on comparison of a version of processor firmware with the version of processor firmware required by a processor [Fig. 5; col. 1, lines 36-43; col. 2, lines 46-51; col. 4, lines 7-12, 54-67; col. 5, lines 1-17, 49-64; col. 6, lines 6-8, 16-20].

[1] Prior art cited by the examiner in the prior office action.

Thangadurai does not expressly disclose about looking for a firmware based on a processor type. However, Fish clearly discloses matching a firmware to a processor based on the processor type [Fig. 3; col. 1, lines 6-8; col. 3, lines 34-51; col. 4, lines 8-19, 45-46; the processor identifier may be either hardware or software; col. 5, lines 35-48, 53-67; col. 6, lines 24-33]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the cited references as both are directed to provide an appropriate firmware to at least one processor. Moreover, the disclosed processor firmware matching mechanism using the version verification by Thangadurai can be enhanced or modified using the processor type identifier. The processor type identifier will definitely provide a faster way to find a corresponding firmware.

Thangadurai and Fish do not expressly disclose about having a management (sub) processor. But a routineer in the art would know that having a management processor in a multiprocessor system is well known. However, Huang clearly discloses this [Fig. 2; col. 1, lines 56-58; col. 2, lines 5-25; col. 3, lines 61-67]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the cited references as both are directed to a multiprocessor system. Moreover, a multiprocessor system will clearly be benefited with a management processor because the management processor can monitor not only the other processors but also monitor environment conditions and shutdown events as disclosed by Huang.

13. As per claim 3, Huang discloses a management processor [Fig. 2; col. 2, lines 29-34; col. 3, line 29 -- col. 4, line 54; col. 7, lines 31-50; col. 8, lines 13-30].

14. As per claims 4 and 5, Thangadurai discloses that the boot-image information comprises version information [col. 1, lines 36-43; col. 2, lines 46-51; col. 4, lines 7-12, 54-67; col. 5, lines 1-17, 49-64; col. 6, lines 6-8, 16-20].

15. As per claims 10 and 11, Thangadurai discloses the boot images include boot images for more than one family of processor instruction set architectures [Fig. 5; col. 5, lines 41-64; some CPUs may require different version of firmware because some CPUs are released earlier than others].

16. As per claim 12, Thangadurai and Fish disclose the invention as detail above.

Response to Arguments

17. Applicant's arguments filed 5/09/06 have been fully considered but they are not persuasive.

18. In the remarks, applicants argued in substance that (1) applicant's method has advantage in that it is suitable for use with processors that may belong to any of several mutually incompatible families, i.e., a heterogeneous system and the cited prior arts do not present a heterogeneous system.

19. As to point (1), the examiner does not find such a statement in the prior arts about not being useful in any other multiprocessor system than they are disclosed in. Thangadurai clearly discloses that CPUs could be of different models [col. 5, lines 49-64]. Similarly, Fish talks about having a process of type A and a processor of type B [col. 1, lines 6-9; col. 3, lines 34-51].

Moreover, currently presented independent claims 1 and 2 do not expressly show the limitation of being a heterogeneous system. Claims 1 and 2 indicate having a plurality of processors in a multiprocessor system. Thangadurai, Fish and Huang clearly disclose a multiprocessor system having a plurality of processors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suresh K. Suryawanshi whose telephone number is 571-272-3668. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sks
June 28, 2006

THOMAS LEE
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